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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,765	08/18/2003	Andrew B. Hastings	1376.725US1	3874
21186 7590 02/08/2008 SCHWEGMAN, LUNDBERG & WOESSNER, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402				
			EXAMINER MCLEAN MAYO, KIMBERLY N	
			ART UNIT 2187	PAPER NUMBER
			MAIL DATE 02/08/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/643,765

Applicant(s)

HASTINGS, ANDREW B.

Examiner

Kimberly N. McLean-Mayo

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22, 25-27 and 30-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 and 37-44 is/are allowed.
- 6) ☒ Claim(s) 21, 22, 27 and 32-35 is/are rejected.
- 7) ☒ Claim(s) 25, 26, 30, 31 and 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/29/08.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The enclosed detailed action is in response to the Amendment submitted on November 14, 2007.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 21-22, 27 and 32-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Kolichtchak (PGPUB: US 2003/0014667) and PaX documentation (<http://pageexec.virtualave.net/>).

Regarding claim 21-22 and 27, Kolichtchak discloses providing a system with a processor having a memory (Figure 1, Reference 110); holding a plurality of pages in the memory (section 0009); translating an address for an instruction fetch (ITLB; translation occurs when the system accesses the address, the corresponding entry in the page table is accessed to retrieve the physical address); and translating an address for a data access (DTLB; translation occurs when the system accesses the address, the corresponding entry in the page table is accessed to retrieve the physical addr), wherein the translating of the address for the instruction fetch includes determining whether the address has an executable indication associated with the address and only if

executable then continuing with the instruction fetch, and is done differently than the translating of the address for the data access (section 0014; the ITLB handles a page fault by terminating the program; which means that the instruction is never fetched from memory if a page fault occurs), and wherein the translating of the address for the data access includes setting a non-executable indication (refer to page 2m section 3. the theory).

Regarding claims 32-35, Kolichtchak discloses means for holding a plurality of pages in the memory (section 0009); means for translating address for instructions (ITLB); means for translating addresses for data, wherein means for translating addresses for instruction operates separately from means for translating addresses for data (DTLB; section 0014), and wherein means for translating the address of a page for a data access further includes means for setting a non executable indication (the PaX documentation indicates that the PTE and TLB management [which includes the TLB miss handler) is the task of the paging subsystem of the operating system and thus it is the TLB management system which controls the setting of the flags (refer to page 2m section 3. the theory, 1<sup>st</sup> par.).

***Allowable Subject Matter***

4. Claims 1-20 and 37-44 are allowed.
5. Claims 25-26, 30-31 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

6. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

It should be noted that the prior art, Kolichtchak, discloses (1) a known PaX system, which the Examiner has cited sections to in the above rejection and the prior art discloses (2) a system which it believes to be an improvement of the PaX system. The Examiner has incorporated the PaX documentation into the rejection. The PaX documentation indicates that the PTE and TLB management [which includes the TLB miss handler) is the task of the paging subsystem of the operating system and thus it is the TLB management system which controls the setting of the flags (refer to page 2, section 3. the theory, 1<sup>st</sup> par.). Additionally, the PaX documentation indicates that the flag entries begin in state 0 and as the processor accesses the page, the state begins to change.

***Conclusion***

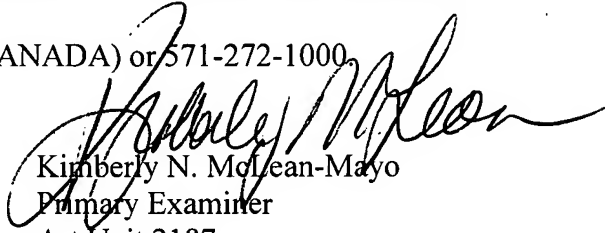
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly N. McLean-Mayo whose telephone number is 571-272-4194. The examiner can normally be reached on Monday-Friday (10-6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571-272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Kimberly N. McLean-Mayo  
Primary Examiner  
Art Unit 2187

KNM

January 29, 2008